

CLAIMS:

1. A method of controlling a washing machine drain pump powered by an electric motor comprising:

driving said motor with the output of a variable frequency pulse width modulated inverter, and

decreasing the frequency of said inverter at low washing machine water levels to reduce the effects of ventilation.

2. A method according to claim 1 wherein the duty cycle of said pulse width modulated inverter is increased during a pump start up phase and subsequently reduced after the completion of the start up phase.

3. A method according to either of claims 1 or 2 including the steps of monitoring the washing machine mains voltage and varying the duty cycle of said inverter as an inverse function of said mains voltage to thereby provide constant motor torque independent of mains voltage.

4. A method according to claim 3 further including the step of reducing the frequency of said inverter if the mains voltage reduces below a predetermined minimum voltage.

5. A method according to claim 1 further including the steps of continuously monitoring peak current supplied by said inverter to said pump motor and providing a fault warning if said current exceeds a predetermined maximum current for a defined period.

6. In a washing machine incorporating a drain pump powered by an electric motor the improvement comprising:

a variable frequency variable duty cycle pulse width modulated inverter the output of which supplies power to said electric motor,

a water level detection means for detecting low washing machine water levels, and

a controller which in response to said water level detection means decreases the

frequency of said inverter at low washing machine water levels to thereby reduce the effects of ventilation.

7. A washing machine according to claim 6 wherein said controller increases the duty cycle of said pulse width modulated inverter during a pump start up phase and subsequently reduces said duty cycle after the completion of the start up phase.

8. A washing machine according to either of claims 6 or 7 including voltage monitoring means for monitoring the washing machine mains voltage, wherein said controller receives data from said voltage monitoring means and wherein said controller varies the duty cycle of said inverter as an inverse function of said mains voltage to thereby provide constant motor torque independent of mains voltage.

9. A washing machine according to claim 8 wherein said controller reduces the frequency of said inverter if the mains voltage reduces below a stored minimum voltage.

10. A washing machine according to claim 6 including peak current detection means for continuously monitoring peak current supplied by said inverter to said pump motor which supplies data to said controller wherein said controller outputs a fault warning if said current exceeds a predetermined maximum current for a defined period.